

In the Claims

Please replace the indicated claims with the following clean versions of the claims, in accordance with 37 C.F.R. § 1.121(c)(1)(i). Cancel all previous versions of any pending claim.

A marked up version showing amendments to any claims being changed is provided in one or more accompanying pages separate from this amendment in accordance with 37 C.F.R. § 1.121(c)(1)(ii). Any claim not accompanied by a marked up version has not been changed relative to the immediate prior version, except that marked up versions are not being supplied for any added claim or canceled claim.

CLAIMS

Cancel Claims 1-36

Please add new claims 37-41.

37. (new) A method for controlling the texture of a cast material alloy, comprising

the steps of:

providing a cast material comprising an alloy;

defining equal channel angular extrusion routes for defining predetermined shear planes and crystallographic directions in the alloy;

selecting at least a route from the defined routes for plastically deforming the alloy during equal channel angular extrusion; and

subjecting the alloy to a predetermined number of passes through the selected routes.

38. (new) A method for controlling the texture of a cast material alloy, comprising the steps of:

providing a cast material comprising an alloy;
defining equal channel angular extrusion routes for defining predetermined shear planes and crystallographic directions in the alloy;
selecting at least one route from the defined routes for processing the alloy;
processing the alloy through the selected at least one route; and
recovery annealing the alloy at a temperature range and a time period determined for the alloy for obtaining substantially uniform grain size, global microstructure and texture.

39. (new) A method for influencing the texture evolution of a cast material alloy, comprising the steps:

providing a cast material comprising an alloy;
defining equal channel angular extrusion routes for defining predetermined shear planes and crystallographic directions in the alloy;
selecting at least one route from the defined routes for processing the alloy;
processing the alloy through the selected at least one route;
recovery annealing the alloy at a temperature range and a time period determined for the alloy; and
further recovery annealing the alloy at a temperature greater than maximum temperature of the temperature range.

40. (new) A method for controlling the texture of a cast material alloy, comprising the steps of:

- providing a cast material comprising an alloy;
- defining equal channel angular extrusion routes for defining predetermined shear planes and crystallographic directions in the alloy;
- selecting at least one route from the defined routes for processing the alloy;
- processing the alloy through the selected at least one route; and
- post-extrusion processing the alloy to create a specific texture, a uniform grain size and a high texture strength for the alloy.

41. (new) A method for controlling the texture of a cast material alloy, which comprises the steps of:

- providing a cast material comprising an alloy;
- defining equal channel angular extrusion routes for defining predetermined shear planes and crystallographic directions in the alloy;
- selecting at least one route from the defined routes for processing the alloy;
- processing the alloy through the selected at least one route; and
- further processing the alloy under equal channel angular extrusion in order to create a specific texture, a uniform grain size and a high texture strength for the alloy.